

Alexander Rosenberg

Why a Philosophy of Social Science?

IT'S SAFE TO ASSUME that you know what the social and behavioral sciences are—psychology, sociology, political science, economics, anthropology, and you might include also disciplines that intersect and overlap these fields, such as geography, demography, social psychology, history, and archaeology. It's not safe to assume you know what philosophy is, even if you have studied a good deal of it already. The reason is that there is nothing like consensus among philosophers about exactly what their subject is. But in order to understand what the philosophy of social science is, and to see why it is important, it is crucial to have some agreement on the nature of philosophy.

Philosophy: A Working Definition

The discipline of philosophy attempts to address two sorts of questions.

1. Questions that the sciences—physical, biological, social, and behavioral—cannot answer
2. Questions about why the sciences cannot answer the former questions

Now of course, there might not be any questions that the sciences cannot answer eventually, in the long run, when all the facts are in, but there certainly are questions that the sciences cannot answer *yet*. These include new questions science hasn't had a chance to answer because it has only just noticed them and doesn't yet have either the experimental equipment or the right theories to deal with them. For example, every year high-energy physics faces new questions about matter that it could not have solved or even entertained before the latest particle accelerators came on-line. There are also questions that scientists have faced for millennia but only at present think themselves able to answer. For example, most biologists now believe they can answer questions about human nature, the origins of man, and the nature of life that have perplexed science and philosophy since their beginnings. And there are other questions that are equally old and still remain unanswered. For example, questions about consciousness, thought, sensation, and emotion remain unsolved.

Of course, modern psychology claims to be making substantial progress in answering these questions. But this claim is controversial. So is biology's contention that questions about human nature, for instance, can now be answered scientifically; for example, some theologians, social scientists, humanists, and even some biologists reject this claim. The debate about whether these questions can be answered by any one science, or even all of them, is a characteristically philosophical one. Those who deny it in effect tell us there are limits to what scientific inquiry can discover. The debate about whether there are limits on the sorts of questions science can answer hinges on two things: First, we need to identify the methods of science, and second, we need to identify the limits on what questions these methods can address. Delineating these methods and deciding on these questions are matters that no one science can by itself address. This is in part what makes them philosophical questions.

Another sort of question that scientists often forswear involves evaluative and normative matters—what ought to be the case, as opposed to what is the case. Science, it is often said, describes and explains the way the world is, but it cannot answer questions about what is right or good or ought to be the case. These fundamental questions are ones for which people do not

need scientific qualifications to give informed and well-grounded answers. Or so it is often claimed. But like the question about the powers of biology to explain all the facts about life and human nature, this issue is highly controversial, and the controversy is pure philosophy.

If there are limits to the questions science can answer, then we will want to know why these limits exist: What is it about science that prevents it from addressing these questions? We will also want to know how, if at all, they can be answered. If, however, there are no such limits, as some would claim, we will want to know why some questions have remained unanswered since the birth of science with the Greeks.

The core areas of philosophy each address different aspects of one or both of these two types of questions. Their focus on these two types of questions is what connects the core areas and makes philosophy a single discipline. Thus, *logic* examines the nature of sound and valid reasoning, as it figures in mathematics, in the sciences as well as in other areas of intellectual life that proceed by argument and inference. Is there just one body of valid principles of inference or do different sciences and subject matters require different logics? *Epistemology* considers the nature, extent, and justification of knowledge: Are all claims to knowledge justified in the same way, by appeal to broadly the same kind of evidence, or are some theories—say, those of mathematics, the social sciences, or the humanities—warranted by considerations different from those natural scientists demand? *Metaphysics* pursues questions about the nature of things: Are there just the material things with which natural science deals? Is the mind a distinct sort of nonphysical substance? Is human action free from physical constraints that determine the behavior of purely mechanical systems? Are there numbers, as opposed to the numerals we employ to express them? *Ethics* and *political philosophy* address those questions that scientific progress raises but cannot answer:

Once we know how to build a nuclear weapon, how to implant embryos, how to redistribute wealth, or how to manipulate behavior, *should* we do any of these things? What binds these disparate areas of inquiry together is that they all address aspects of the two questions that provide our working definition of philosophy.

As previously noted, at various times in the history of science, questions at first deemed unanswerable by science, and addressed by philosophy, have been expropriated by science. In fact the history of science is the story of how each of the sciences emancipated itself from philosophy: mathematics in the time of the ancient Greeks, physics in the seventeenth century, chemistry one hundred years later, biology in 1859 with the publication of Charles Darwin's *Origin of Species*, psychology in the early part of the twentieth century, and linguistics and computer science in our own lifetimes. Each of these disciplines has left parting gifts to philosophy, questions that it could not answer, for example: What are numbers? What is time? What is the relation of psychological processes to neural ones?

Sometimes in the course of this history, a question philosophy has preserved is expropriated by science because it is ready to answer that question. Occasionally, a question is expropriated by science from philosophy, only to be returned. Opinion about the ability of science, especially social science, to answer ethical and moral questions has shifted, sometimes frequently, over the distant and the recent past.

Philosophy and the Social Sciences

Even if there are questions the sciences cannot answer, and further questions about why the sciences cannot answer them, why should a scientist, and in particular a behavioral or social scientist take any interest in them? The reason is simple. Though the individual sciences cannot answer these questions, individual scientists have to take sides on them, and the sides they take will affect and sometimes even determine the questions they address as answerable in their disciplines, and the methods they employ to do so. Sometimes scientists act consciously, sometimes by default, in their choice of questions to address and methods to employ. Because addressing these questions is important for the scientist, it is certainly better if the scientist makes an informed and conscious choice.

The unavoidability and importance of philosophical questions is even more significant for the social scientist than for the natural scientist. For the natural sciences have a much more established body of successful answers to questions than social science. And they have many more well established methods for answering them. Thus, many of the basic philosophical questions about the limits and the methods of the natural sciences have been shouldered aside by more immediate questions clearly within the limits of natural science.

The social and behavioral sciences have not been so fortunate. Among these disciplines there is no consensus on what the questions are that each of them has the power to address, nor agreement about the methods to be employed, nor about why some questions are beyond their purviews. This is true both between disciplines and even within some of them. Though schools and groups, movements and camps, claim to have developed appropriate methods, identified significant questions, and provided convincing answers to these questions, there is certainly nothing like the agreement on such claims that we find in any of the natural sciences. In the absence of agreement and benchmark accomplishments among social scientists, every choice with regard to research questions and methods of tackling them is implicitly or explicitly a *gamble* that the question chosen is answerable, that questions not chosen are either less important or unanswerable, that the means used to attack the question are appropriate to it, and that other methods are not. When social scientists choose to employ methods as close to those of natural science as possible, they commit themselves to the position that there are laws of human behavior we can discover and employ in predicting and controlling it. When they spurn such methods, it is because they hold that such methods can't answer the really important questions about human activity. Either view arises in response to the first of the two sorts of questions that define philosophy: questions that science cannot answer.

Whether these gambles really pay off can usually not be known within the lifetimes of the social scientists who make them. And yet the choices must be justified, either by an explanation of why the methods of natural science can answer the question the social scientist addresses, or why they cannot. The adequacy of such explanations is our only reasonable basis for choosing methods of inquiry. But such explanations address the second of the two sorts of questions that define philosophy: questions about why the sciences cannot answer the first sort of questions. They are therefore philosophical arguments, regardless of whether the person who offers them is a philosopher or not. Indeed, social scientists are in at least as good a position to answer the two kinds of questions that define philosophy as philosophers themselves are. And this is what makes the subject so important for the social scientist.

The traditional questions for the philosophy of social science reflect the importance of the choices of research questions and of methods of tackling them. And in this book we shall examine almost all of these questions at length. First, there is the question of whether human action can be explained in the way that natural science explains phenomena in its domain. Alternative answers to this question raise further questions:

If the answer is yes, why are our explanations of human action so much less precise and less improvable than scientific explanations? If the answer is no, that the methods of natural science are inappropriate, then what is the right way to explain action scientifically? And if there is no way to explain human action scientifically, as some philosophers and social scientists claim, why does human action require an approach different-from that of natural science, and what approach is required? These will be the topics of the next three chapters.

Our discussion of these issues will involve a study of the nature of explanation and causation, the testing of generalizations and laws; and it will reflect on the nature of thought and its relation to behavior and to language. It will reveal the tension between the (future) purposes that explain our actions and the (prior) causes that determine our behavior. The future purposes give our actions meaning and make them intelligible. The prior causes act without revealing the significance of our behavior. We shall consider how social scientists, behaviorists for example, have attempted to substitute new questions about human action for old ones, because of the social scientists' inability to answer the old ones. And we shall have to decide whether this change is an intellectually defensible one. For it is in effect the claim that some questions that science cannot answer are not after all coherent, legitimate questions that require an answer.

In Chapters 5 and 6 we will turn to questions about whether the primary explanatory factors in social science should be large groups of people and their institutional interactions instead of the choices of individual human agents. Differing social sciences, especially economics and sociology, have profound differences on this point, differences along many dimensions, differences so abstract and general that they have long concerned philosophers. The social scientist who holds that large-scale social facts explain individual conduct, instead of the reverse, makes strong metaphysical assumptions about the reality of groups independent of the individuals who compose them. Such a theory—called holism— also requires a form of explanation, functionalism, that raises other profound questions about differences between the explanatory strategy of social and of natural science. This theory, which gives pride of explanatory place to social wholes, might seem quite unappealing if the only alternative to it, "individualism," as advanced by economists and sociobiologists, for instance, were not faced with equally profound philosophical questions.

In Chapter 7 we turn to the relation between the social sciences and moral philosophy, examining whether we can expect answers to questions about what is right, or fair, or just, or good from the social sciences themselves. Even if, as some hold, no conclusions about what ought to be the case can be inferred even from true theories about what is the case, it will still turn out that alternative approaches to social science and competing moral theories have natural affinities to each other and make strong demands on one another as well. We must also examine the question of whether there are morally imposed limits to legitimate inquiry in the social sciences.

In the final chapter I try to show why the immediate choices that social scientists make in

the conduct of their inquiry commit them to taking sides on the most profound and perennial questions of philosophy. If I am right, then no social scientist can afford to ignore the philosophy of social science or any other compartment of philosophy.

As a start in establishing this conclusion, let us consider one of the most serious questions facing the philosophy of the social sciences. In a way, this question organizes many of the problems mentioned above to be addressed in later chapters, and it provides a framework that shows how serious the problems are, despite their apparently abstract and general character.

The question arises in the comparisons made between the natural and the social sciences. The natural sciences are often *alleged*, especially by natural scientists, to have made far greater *progress* than the social sciences. Those who hold this view have frequently drawn substantial conclusions from it about the social sciences and about human behavior.

Those who reject this view have also drawn striking conclusions about both of these subjects. Therefore, the distinctive controversies in the philosophy of social science may be said to begin with this question. Indeed, these debates begin with the word "alleged" in the claim about differences in progress between the disciplines, and they include disputes about what constitutes "progress," whether the natural sciences evince it, and whether the social sciences do, can, or should aim at similar "progress."

The philosophical issues this controversy raises can be ignored by only the most insular of social scientists, for on the sides we take in the debate about these issues hinge many very practical questions about the aims, conduct, and application of and public support for research in the social sciences. If, on the one hand, you agree that progress in the social sciences leaves much to be desired, by comparison with natural science, then you will be inclined to seek an explanation for this fact in the failure of social science to fully or correctly implement the methods— of natural science in the study of human behavior. If, on the other hand, you consider that the social sciences cannot and/or should not implement the methods of natural science in the study of human behavior, you will reject as misconceived the invidious comparison between the natural and the social sciences. You will conclude that the study of human action proceeds in a different way and is appraised along different standards than the natural sciences.

I shall outline below the arguments for and against the claims that the social sciences have failed to progress, and that this failure needs explanation. The arguments on both sides make it clear how a question about the history of social science is really a question about its philosophy. These arguments share one common view: A neat compromise is impossible. Such a compromise would suggest that the social sciences have not made so much progress as has natural science but that they have made some. It suggests that very broadly the methods of the social sciences are the same as those of natural science, though their specific concepts are distinctive, and the human interests they serve are different. Though this is a possible view, much of the effort of philosophers and social scientists who have dealt with the philosophy of social science suggests that this nice compromise is a difficult one to maintain.

The problems of whether the natural sciences have made more progress than the social sciences and whether it even makes *sense* to say this are especially important in light of the needs of humans to understand and *improve* our social lives, individually and in the aggregate.

For such understanding and improvement require increased knowledge of human behavior. And how such knowledge is to be sought depends on how we answer these philosophical questions.

Some philosophers and social scientists will reject this question as less central to the philosophy of social science. On their view the social sciences raise distinctive philosophical problems that need to be addressed independent of this problem, and the chief goal of the philosophy of social science is to understand these disciplines, without casting an eye to questions that are at best premature and at worst a distraction. One way to decide who is right about the importance of the question of progress in social science is to see how well the question helps us organize and fit together all these other distinctive problems of the particular social sciences.

Progress and Prediction

First I shall set forth the argument for the unfavorable comparison: Natural science has provided increasingly reliable knowledge about the physical world since at least the seventeenth century. From precise predictions of the positions of the planets, the natural sciences have gone on to unified explanations of the properties of chemical substances and detailed characterization of molecular biology of life. In addition to systematic explanation and precise prediction, the natural sciences have provided an accelerating application of technologies to control features of the natural world. This sustained and apparently accumulating growth of knowledge and application seems absent from the .sciences of human behavior.

In varying social disciplines there seem to be moments at which a breakthrough to cumulating knowledge has been achieved: Adam Smith's *Wealth of Nations*, or Emile Durkheim's work in *Suicide*, or perhaps John Maynard Keynes's *General Theory of Employment, Interest and Money*, or B. F. Skinner's *Behavior of Organisms*, for instance. But subsequent developments have never confirmed such assessments. Though the social sciences have aimed at predicting and explaining human behavior and its consequences at least since Thucydides in the fifth century B.C., some say we are really no better at it than the Greeks.

So, the argument concludes, something is the matter with the social sciences; probably, they are not "scientific" enough in their methods. They need to adopt methods that more successfully uncover laws, or at any rate generalizations, that can be improved in the direction of laws, which can be brought together in theories that explain them and their exceptions.

Why laws? It's pretty clear that technological control and predictive success come only through the discovery of general regularities, ones that enable us to bend the future to our desires by manipulating present conditions and, perhaps more important, to prevent future misfortunes by rearranging present circumstances. The only way this is possible is through reliable knowledge of the future, knowledge of the sort that only laws can provide.

There is a less practical and more philosophical argument for the importance science attaches to laws, though in the end this argument shares the practical concerns of our interests in controlling nature. The kinds of explanation science seeks are *causal*, and the certification of scientific claims as knowledge, or at least justified belief, comes from observation, experiment, and the collection of data. Both of these features of science demand the discovery and

improvement of generalizations and laws.

Consider how we distinguish a causal sequence from an accidental one. Suppose I walk under a ladder on which a carpenter is standing, and I am hit immediately by a falling hammer. Why do we say that it was the carpenter's dropping the hammer, as opposed to my walking under his ladder that caused the hammer to fall and injure me? One might be tempted to say that we can tell, just by looking, what caused the accident. But a little reflection shows that this is wrong. For all we know, there might have been a complicated device at the base of the ladder, tripped by my leg that wrenched the hammer from the carpenter's hand.

The fact is that there is no regularity in our experience connecting walking under ladders and accidents (that's why we call such a connection a superstition), and there is one connecting the release of heavy objects and their falling. It is our experience of the regular succession of pairs of events in the past that leads us to describe the sequences like them as causal, and those unlike them as accidental.

As David Hume argued in the eighteenth century, there is certainly nothing we can directly *observe* in any single sequence, independent of our past experiences, no glue attaching causes to their effects, that enables us to make the distinction between causal sequences and accidental ones. And when we trace observed causal sequences back to fundamental physical regularities, like the law that bodies exert gravitational attraction on one another (and that's why the released hammer fell), there is nothing more to them than universality of connection. When we reach the most fundamental laws of nature, they will themselves be nothing more than statements of constant conjunction of distinct events; they will not illuminate less fundamental sequences by showing them to be necessary, or "intelligible," or the inevitable result of the operation of hidden causal powers. Causal explanation must inevitably appeal to laws connecting the cause and its effect. And there is no stopping place in the search for more and more fundamental laws. The role accorded to laws, and to generalizations that can be improved into laws, has been a continuing feature of empiricist philosophy and empirical methodology in science ever since the work of Hume. Because our knowledge of causation in individual cases is based on the identification of laws, which themselves are discovered through the observation of repeated sequences, it is no surprise that such observation is what tests our explanatory and predictive hypotheses and certifies them as justified knowledge.

Why have the social sciences not progressed in the provision of cumulating scientific knowledge with technological payoff? The social sciences have failed, despite long attempts, to uncover laws or even empirical generalizations that could be improved in the direction of real laws about human behavior and its consequences. This diagnosis calls for both an explanation of why no laws have been discovered and if possible a proposal about how we can go about discovering them.

One compelling explanation is that social science is just much *harder* than natural science: The research object is we human beings, and we are fiercely complicated systems. It is therefore no surprise that less progress might be made in these disciplines than in ones that deal with such simple objects as quarks, chemical bonds, and chromosomes. After all, the human being is subject to all the regularities of the natural sciences, as well as to those of psychology, sociology, economics, et cetera. Teasing out the separate effects of all the forces determining our behavior is more formidable a task than that which faces any other "discipline.

Add to this the restrictions of time, money, and morality in the construction of controlled experiments needed to uncover causal regularities, and the relatively underdeveloped character of social science should be no surprise. On this explanation, the social sciences are just "young sciences." By and large they are or can be scientific enough in their methods; they just require more time and resources in order to produce the social knowledge we seek.

The trouble with this explanation is its counsel of patience and its historical perspective. Are the social sciences really young, by comparison to the natural sciences? From when should we date these disciplines? From the post-World War II effusion of research money, statistical methods, cheap computation, and improved scientific education of social scientists? From the self-conscious attempts, like Durkheim's in the late nineteenth century, to establish a quantitative science of society? From the Marquis de Condorcet's or Thomas Hobbes's attempts to lay out a rational choice theory of human behavior in the eighteenth or seventeenth centuries, or from Thucydides' *Peloponnesian War* in the fifth century B.C.? Certainly, the desire to understand and predict human behavior is at least as old as the desire to understand natural phenomena, and the search for laws of human behavior goes back at least past Machiavelli.

For some philosophers and for even more social scientists, the claim that the social sciences are young rings hollow. Behaviorists in all the social sciences provide good illustrations of this attitude. For them patience has worn out, and they provide a different explanation for the failure to discover laws. To begin with they don't accept the argument that the complexity of human beings leads to the difficulty of discovering laws about them. Behaviorists note that as natural science developed, its subject matter became more complex and more difficult to work with; for example, we need to erect vast particle accelerators to learn about objects on which it is extremely difficult to make even the most indirect observations, in order to advance our knowledge in physics nowadays. But the increasing complexity of research in the natural sciences has not resulted in any slowdown in scientific advance. Quite to the contrary, the rate of "progress" has if anything increased over time. Thus, complexity by itself can hardly be an excuse for the social sciences' lack of progress.

Moreover, the argument continues, the social sciences have had a great advantage over the natural sciences, one that makes their comparative lack of progress hard to explain as merely the result of complexity and the difficulties of experiment. In the natural sciences, the greatest obstacle to advance has been conceptual, not factual; that is, advances have often been the result of the realization that our descriptive categories needed to be changed because they were a barrier to discovering generalizations. Thus, the Newtonian revolution was the result of realizing that Aristotle's distinction between *rest* and *motion* needed to be replaced by one between *uniform motion* (motion in a straight line at constant velocity) and *acceleration*. Our commonsense supposition that if something is moving, there must be a cause, is wrong and must be given up, in favor of a counterintuitive assumption, if we are to discover the laws of motion. Similarly, the pre-Darwinian conception of unchangeable, immutable species must be surrendered if we are to entertain a biological theory that explains diversity by appeal to blind variation and natural selection that change species into new ones.

But in the social sciences, there has been almost universal agreement that the descriptive categories that common sense has used since the dawn of history are the right ones. Traditionally, what we have wanted to know in social science is the causes and consequences

of our *actions*, and we hold that these actions are determined by our *desires* and our *beliefs*. Accordingly, social scientists have long searched for laws connecting actions, beliefs, and desires, on the venerable conviction that these are the natural categories into which human behavior and its causes fall. If these are the right categories with which to describe human behavior, and if we have had them available from time immemorial, then the social sciences have been *free* from the greatest obstacle to advance in the natural sciences: the need to carve out entirely new ways of looking at the world. Thus, we might have expected progress in the social sciences to have been possible or, perhaps, even more rapid in the social than the natural sciences. The absence of it makes the excuse that these are young disciplines, facing subjects of great complexity, unconvincing to many social scientists and some philosophers.

In fact, these people argue that the basic categories of social science are wrong. The reason no laws have been uncovered is that the categories of action, desire/belief, and their cognates have prevented us from discovering such laws. And they seek to supplant these categories with new ones, like those of operant behaviorism, sociological functionalism, sociobiology, and others. It is easy to see how a category scheme can prevent us from uncovering laws or regularities, even when they would otherwise be easy to find.

Suppose we define "fish" as "aquatic animal" and then attempt to frame a generalization about how fish breathe. We do so by catching fish and examining their anatomy. Our observation leads to the hypothesis that fish breathe through gills. Casting our nets more widely, we begin to trap whales and dolphins, which leads us to modify our generalization to "all fish breathe through gills, *save for* whales and dolphins." But then we start to drag along the ocean floor and discover lobsters, starfish, crab, not to mention jellyfish floating at the surface, all breathing in different ways. There's no point adding more and more exceptions to our generalization. There just isn't one generalization about how all fish breathe, not as we have defined fish. The trouble is obvious: It's our definition of fish as "aquatic animal." A narrower definition, like "scaly aquatic vertebrate" will not only, as Aristotle said, "carve nature closer to the joints"—that is, reflect its real divisions more accurately, it will also enable us to frame simple generalizations that stand up to testing against new data. Indeed, the difference between a "kind-term" like "gold," which reflects real divisions in nature, and one like "fake gold," which does not, is the fact that there are laws about the former, and not the latter. That is what makes the kind-terms that figure in laws "natural kinds," as opposed to artificial ones.

Now there is doubtless a good explanation of why we have become attached to the kind-terms *action*, *desire*, and *belief* as the explanatory variables for human behavior. They have emerged as tools for guiding our expectations about how others will act, but we have uncovered no laws about the behavior they explain. Perhaps the failure to find laws about this behavior is the result of the fact that these kind of terms are not "natural," they just don't carve things up at the joints. Like our example "fish," every generalization that employs them is so riddled with exceptions that there are no laws we can discover to be stated in these terms. The prescription is obviously to substitute new explanatory variables for these unnatural ones, terms like "reinforcer" from behaviorism, or "repression" from psychoanalysis, "alienation" from Marxian theory, or "anomie" from Durkheim's sociological tradition. Advocates of each of these theories promise that the application of their preferred descriptive vocabulary will enable the social sciences to begin to progress and cumulate in ways that the natural sciences have. If these

social scientists are correct, their disciplines will indeed turn out to be young sciences. For in the absence of their preferred system of kinds and categories, the social sciences are rather like chemistry before Lavoisier: trying to describe combustion in terms of "phlogiston," instead of "oxygen," and failing because there is no such thing.

Every step in this chain of reasoning is philosophically controversial: the claim that the natural sciences show cumulating progress, whereas the social sciences do not; the assumptions about what progress in the growth of knowledge consists of; the role of laws in providing the growth of knowledge; the purported explanations of why the social sciences have not yet uncovered any laws; and the prescriptions about how social scientists should proceed if they hope to. It will be easiest to see how philosophically controversial is every one of these steps if we outline the challenges to this chain of reasoning made by those who reject it.

Understanding and Intelligibility

Those who reject the argument that natural science has progressed, whereas social science has languished, begin their counterargument at the very foundations of the philosophy of natural science. To begin with, they hold that the natural sciences have not in fact made the kind of cumulating progress ordinarily attributed to them. In doing so they exploit the account of science advanced in Thomas Kuhn's *Structure of Scientific Revolutions*, which, since its publication in 1962, has been the work most frequently cited in social scientists' writings on method. Many of these social scientists interpret Kuhn as claiming that instead of by progress, scientific history from Aristotle to Einstein is characterized by change, by the succession of theories, or what Kuhn called "paradigms," which replace one another without improving on their predecessors.

According to these opponents of cumulative "progress" in science, the reason that scientific theories do not build on their predecessors is very roughly that they constitute irreconcilably different conceptual schemes, and accurate translation between them is impossible. There is no neutral basis for translation, no theory-free language to describe observations that would enable us to compare theories for predictive success. One theory's confirming data will be another theory's experimental error. Thus, the claim that science shows persistent improvements in predictive success is moot, for any such alleged demonstration begs the question against theories that have been superseded. The appearance to the contrary, Kuhn held, is the result of scientists in each generation rewriting the history of their subjects in order to give the appearance of accumulation, so that the latest view can carry the mantle of success borne by the scientific achievements it replaces.

In fact, Kuhn seemed to claim that the whole idea that predictive success should constitute a trans-disciplinary criterion for scientific knowledge is part of a conceptual scheme: the positivism or empiricism associated with Newtonian science. But the positivist or empiricist paradigm has now been replaced in physical science by relativistic and quantum theoretical conceptual schemes that deprive Newtonian demands of their authority. Because it was a deterministic theory of causal mechanisms, Newtonian science made prediction a requirement of scientific achievement. According to quantum mechanics, the world is indeterministic; thus definitive prediction can no longer be a necessary condition of scientific success. Nor does it make sense to search for causal mechanisms described in strict and exceptionless laws.

For the same reasons that scientific standards change within each of the natural sciences, they differ extensively between them and differ even more widely from the aims and methods of the social sciences. Thus, the charge that the social sciences have made less progress than the natural sciences is often said to rest on a myopic absolutism that improperly generalizes from the methodological recipes of an obsolete paradigm.

Of course, within a given discipline prediction and practical application are important ways of "articulating the paradigm." But once we identify the paradigm that governs a social science, we will be able to identify what kinds of predictions and applications are appropriate. Moreover, we will be able to see that in the light of these standards, the social sciences are as cumulating as we could demand. In the social sciences there is as much progress as in the natural sciences. It's just a different kind of progress.

Whereas the natural sciences aim primarily at providing causal theories about underlying mechanisms, the social sciences are held to seek an understanding of behavior by rendering it *intelligible*. They uncover its meaning or significance. Meaning or significance, the interpretation of human behavior that enables us to understand it, is not fundamentally causal, nor is it provided by the discovery of laws or generalizations of any interesting sorts. Unlike the natural sciences, the social disciplines have an identifiable stopping place: intelligibility. The social sciences concern themselves with that part of human behavior ordinarily described as *action* and not with mere movements of or at the surface of the body. Speech, not snoring, jumping, not falling, suicide, not just death—these are the subject matter of certain social sciences, and the social sciences that do not deal with individual action deal with its consequences and its aggregation into large-scale events and institutions.

Though understanding the meaning of actions is not in the end a species of causal inquiry, opponents of prediction as the chief goal of social science insist that this understanding certainly satisfies *appropriate* standards of predictive success: the standard required to navigate successfully in a society of other human beings. When we step back and consider how reliable our predictions of the behavior of others are, we cannot fail to be impressed with the implicit theory that growing up in society has provided us. This theory, known among philosophers as "folk psychology," tells us that people do the things they do roughly because they want certain ends and believe these acts will help attain them. It includes an implicit theory about how people's environments shape their beliefs (if the traffic light turns red, and I'm looking, I will acquire the belief that it's red) and desires (if there are two indistinguishable goods available at different prices, I will want the cheaper one). It is a theory in which we place great confidence. (Consider, every time you cross the street in the presence of cars stopped at a stop sign, you stake your life on this theory's predictions about the actions of car drivers.) Of course when we try to express the central principles of this theory, we seem to produce only banal and obvious principles, like the one expressed above: People act in ways that they believe will attain their desires. However, this is no defect in the theory. It just means that though the theory is very complicated, we know parts of it very well. Moreover, as we shall see, folk psychology is claimed to have important and highly unbanal extensions (see Chapter 4).

The regularities we dredge up when we seek to identify these principles seem too weak to do justice to our very considerable predictive powers about other people's actions. But this shows that the very complex theory we use is somehow unconsciously represented, like the

grammatical theory that governs our speech and prevents us from making silly syntactical errors, though we could never express very much of it consciously. And our folk psychology had already reached a high degree of predictive power well before the beginning of recorded history, long before we acquired a comparably powerful theory in natural science.

Therefore, even on the questionable standard of predictive success, folk psychology does very well. And it does so by identifying the meaning of behavior—by showing that it is action undertaken in the light of beliefs and desires.

Social science, it is argued, is and should be the extension and development of this theory. It inherits the great predictive strength of folk psychology, but the main aim of social science is not to improve on this predictive power. Its aim, rather, is to extend this theory from the understanding of everyday interactions of individuals, to interactions among large numbers of individuals in social institutions, and to interactions among individuals whose cultures and forms of life are very different from our own.

Opponents of a "scientific" approach to social science claim that much of the apparent sterility and lack of progress in these disciplines is the result of slavish attempts to force folk psychology into the mold of a causal theory of the determinants of action. If social science has not progressed, it is because many social scientists have misunderstood this theory and misconstrued it as a causal one, to be improved by somehow sharpening its predictive power. The result, as ill microeconomic theory, has been to produce general statements that are not laws because they are either vacuous definitions or else flatly false. In other disciplines, like psychology or parts of sociology, the misunderstanding of folk psychology has produced jargon-ridden pseudoscience.

The trouble is that folk psychology has reached its maximal level of predictive power. This is because folk psychology is not a causal theory, to be improved by the means that scientists employ to improve theory in natural science. Opponents of a "scientific" approach hold that the predictive power of folk psychology is a sort of by-product of its real objective: providing understanding through interpretation. When we accept this objective as the proper study of social science, we will recognize the important advances social science has attained. Doubts about progress will be shown to be not only groundless but also fundamentally misconceived.

Proponents of this view invite us to consider how much more we now know about other cultures, their mores, morals, institutions, social rules and conventions, values, religions, myths, art, music, medicine, than we knew a century ago. Consider how much more we know about our own society as a result of what we have learned about other societies. Our understanding of these initially strange people is not the product of "scientific investigation" but of the cultural anthropologist's "going native," attempting to learn about a foreign culture from the inside, coming to understand the meaning of his subjects' actions in the terms his subjects employ. It also reflects important discoveries about the hidden, deeper meanings behind behavior that social scientists have uncovered.

This hard-won knowledge represents progress in two different ways. We can understand people of differing cultures, indeed acquire as much predictive confidence about them as our own folk psychology provides us about ourselves, for what we are learning is in effect their folk psychology. Moreover, learning about other cultures teaches much about our own: Specifically,

it leads us to see that what we might identify in our beliefs, values, and institutions as universal or true or optimal is really parochial, local, and merely relative to our transitory condition. Coming to understand another and very different society, by learning the meaning of its features, is a cure for moral absolutism, xenophobia, racism, and other ills. This is how social science progresses, not by providing us with the means to control the behavior of others, but by providing us interpretations that will enable us to place our own society in perspective.

A scientific approach to human behavior is also held to miss, when it fails to come to grips with the centrality of meaning and significance to social knowledge, the moral dimension of social science. The natural sciences aim, in part, at technological progress: That's what makes predictive power so important for them. The social sciences aim at ameliorating the human condition. This involves choices that natural science does not seem called upon to make, moral choices about what will count as improvements and what will not. It involves identifying the real, as opposed to the apparent, meanings of social institutions and emancipating human beings from their mistaken beliefs about these meanings.

If the conceptual apparatus we need in order to uncover the meaning of human events, individual or aggregate, is irreconcilable with the search for causal laws, as some social scientists hold, then so much the worse for this vain attempt to discover such laws. The idea that we should replace our explanatory system with one that "carves nature at the joints" is based on a fundamental misunderstanding of the nature and aims of social science. The philosophical problem it raises is not that of whether the search for meaning can be given a causal interpretation, but of what sort of conceptual confusion should have led so many philosophers and social scientists down the blind alley of attempts to construct and advance a discipline that apes inappropriately the methods of natural science. So goes the rebuttal to the claim that the social sciences have not progressed and need to be reorganized on the model of a natural science.

Are There Right Answers in the Philosophy of Social Science?

The two arguments that we have canvassed cover a lot of ground and touch on both very practical questions of social scientific method and the most fundamental problems of philosophy. These two arguments reflect what may be popular positions on a continuum along which most social scientists should be able to place themselves. But though they are extreme views, they have real proponents. More important, whether they want to or not, all social scientists take sides on the problems these arguments reflect. That is what makes the philosophy of social science relevant to social science itself.

The extreme views are probably beyond serious adjudication. No one is going to convince a proponent of either extreme that the view all the way across on the other side of the continuum is right. The reason is that the differences between them rest on very fundamental issues of philosophy, claims about epistemology, metaphysics, ethics, issues that have not been settled in philosophy since they were first raised by Plato twenty-four hundred years ago.

But then why should the rest of us bother about these issues? They cannot be settled, and we don't occupy these extreme positions in the philosophy of social science. Indeed, many social scientists aren't interested in the subject at all. They claim to have good reason not to be: Its problems are insoluble and therefore irrelevant to their concerns. Insoluble perhaps, but

irrelevant, no.

Between the two polar positions I have described there may not be intermediate theories that are in coherent, stable equilibrium. In philosophical matters the policy of finding a happy medium that splits the difference between rival theories is often impossible, for the positions are logically incompatible, and many attempts to embrace parts of each result not in compromise but in incoherence. Picking and choosing components of these two philosophies, with a view to developing a "third way," may result in a coherent position, but one vulnerable to being shifted by unanswerable arguments all the way to one extreme or the other.

For example, economists or political scientists committed to citing individual expectations and preferences as the causes of human behavior need to explain why we have secured no predictively reliable laws about individual action framed in these terms. Or they must show why no such laws are necessary. Without such an explanation, the economists leave themselves open to the claim that the knowledge they provide is not causal, but at best information that helps us *interpret* the actions of consumers or voters in late capitalist society. Or if they don't give an account of how causal claims can be made and justified without the support of laws, these social scientists are vulnerable to the charge that their explanatory variables are not natural kinds and need to be surrendered in any serious causal theory of human behavior. In effect, for such a social scientist to find an intermediate position involves facing several classical philosophical problems about causation.

The sociologist or cultural anthropologist who brings back an account of the meanings of other cultures, and who defends its accuracy by comparing its predictive success with that of folk psychology in our own culture, must answer the challenge that for all its alleged successes, folk psychology is notoriously vague, often fails us at crucial times, and has manifested no improvement throughout recorded history. If these social scientists reply by repudiating improving predictive success as a mark of knowledge, they have willy-nilly taken sides in the most profound dispute of epistemology: The notion that beyond a certain point confirmation by observation no longer controls what we identify as knowledge or improvements in it is certainly incompatible with empiricism. It can be underwritten only by a rationalist's epistemology: a theory of knowledge that explains how truths can be justified a priori, that is, without appeal to empirical evidence.

Social scientists who wish to embrace both the natural scientific approach to human behavior and the moral agenda of learning from this approach what *ought* to be done to improve the human condition must face several of the thorniest problems of moral philosophy. They must derive what *ought* to be the case from what is the case, a derivation widely held to be impossible (as we shall see in Chapter 7). They need an explanation of how we can acquire moral knowledge "scientifically" and a good account of why such moral knowledge does not justify paternalistic imposition of its particular claims on a potentially unwilling society.

Many social scientists adopt what they believe to be a method of advancing their discipline as a body of scientific theory that is predictively relevant for policy applications. Let us call such social scientists *naturalists* to indicate their commitment to methods adapted from the natural sciences. Other less apt labels for naturalism are empiricism, behaviorism, and positivism—the latter often a term of derision among opponents of naturalism. Most naturalists believe they can endorse these methods while doing justice to the meaningfulness and significance of human

action. And they do not think anything can force them to choose between these two commitments. But this combination has been subject to repeated objection over the course of the past hundred years, and current controversies about social science are but reiterations of this objection and replies to it.

Those who hold that we cannot do justice to actions as meaningful while we seek a naturalistic or scientific analysis of them and that the aim of social science must be intelligibility, whereas its means should be interpretation, have adopted a succession of labels since the late nineteenth century: idealists, phenomenologists, structuralists, ethno-methodologists, students of semiotics or hermeneutics, post modernists, and deconstructionists. For convenience, I shall sometimes refer to their view as *anti-naturalism*, and sometimes as *interpretational social science*. The history of science presents both naturalists and anti-naturalists with a common problem. On the one hand, the study of man that does not treat his behavior as *action*, guided by intentions and meanings, is simply not a *social science*. On the other hand, the history of natural science is held to be that of continually increasing its explanatory scope by augmenting its predictive power. And it has done this by successively removing meaning and significance from nature.

After Galileo the stars and planets were deprived of the goals that Aristotelian science had attributed to them; then Darwin showed that the adaptation of flora and fauna to their environments was to be explained without attributing meaning to it or intentions to their creator. Now the only arena of intention and meaning left is their "home base," human action. In each of the previous cases, the greatest obstacle to scientific advance was the conviction that any adequate explanation of the phenomena required appeal to meanings. The record of the history of science requires every social scientist to face the question of why human behavior should be any exception to this alleged pattern. Every potential answer to this question is general enough, meta-theoretical enough, and abstract enough to count as an exercise in the philosophy of social science, and in philosophy as a whole, broadly considered. For every answer will bear directly on the two questions with which we have defined philosophy.